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PROJECT SPECIFIC PLAN FOR EXCAVATION CONTROL AND PRECERTIFICATION OF THE AREA 2, PHASE II - SUBAREA 3 TRAILER COMPLEX AREA AND AQUIFER PROJECT LAYDOWN AREA

(SUPPLEMENT TO 20300-PSP-0011)

ENVIRONMENTAL CLOSURE PROJECT

FERNALD CLOSURE PROJECT
FERNALD, OHIO

JUNE 2005

U.S. DEPARTMENT OF ENERGY

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FERNALD CLOSURE PROJECT

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LIST OF ACRONYMS AND ABBREVIATIONS

A2PIIS3	Area 2, Phase II - Subarea 3
AQL	Aquifer Project Laydown Area
ASCOC	area-specific constituent of concern
CDL	Certification Design Letter
COC	constituent of concern
DOE	U.S. Department of Energy
EMS	Environmental Monitoring System
FACTS	Fernald Analytical Computerized Tracking System
FCP	Fernald Closure Project
FRL	final remediation level
GC	gas chromatograph
HPGe	high-purity germanium detector
MDC	minimum detectable concentration
mg/kg	milligrams per kilogram
NaI	Sodium Iodide
pCi/g	picoCuries per gram
PID	photo ionization detector
ppm	parts per million
PSP	Project Specific Plan
PWID	Project Waste Identification and Disposition
RSS	Radiation Scanning System
RTIMP	Real Time Instrumentation Measurement Program
RTRAK	Real-Time Radiation Tracking System
RWP	Radiological Work Permit
SED	Sitewide Environmental Database
SSOD	Storm Sewer Outfall Ditch
SWRB	Storm Water Retention Basin
TCA	Trailer Complex Area
V/FCN	Variance/Field Change Notice
WAC	waste acceptance criteria
WAO	Waste Acceptance Organization

1.0 INTRODUCTION

This Project Specific Plan (PSP) describes the data collection activities necessary to support excavation control and precertification activities within the Area 2, Phase II - Subarea 3 (A2PIIS3) Trailer Complex (TCA) and Aquifer Project Laydown (AQL) Areas. This PSP only represents the specific information regarding soils within this portion of A2PIIS3. The general information that is routinely addressed in a PSP can be found in 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*. While this PSP has section headings similar to a full-length PSP, where the information in the section is identical to the information in the General PSP (20300-PSP-0011), a reference to this PSP is made and the information is not repeated.

1.1 PURPOSE

The purpose of this PSP is to provide specific direction regarding the excavation control and precertification of soils within the TCA/AQL Area. As shown on Figure 1-1, this area is in the southwestern portion of the site. Specific information on reasons to sample, sample location, number of borings, depth intervals, and constituents of concern will be documented according to Section 1.3.

1.2 SCOPE

The areas included within the scope of this PSP are two discrete excavations within the footprint of the TCA/AQL Area. These are fully described in Section 2. The schedule for implementation of this PSP is expected to begin in June 2005. Precertification of this area will begin following successful completion of the excavation control process and prior to certification.

This PSP is not considered a work authorization document (for implementation of fieldwork) per SH-0012, Work Permits. Work authorization documents directing the implementation of fieldwork, per SH-0012, may include applicable Environmental Services procedures, Fluor Fernald work permits, Radiological Work Permits (RWPs), penetration permits, and other applicable permits.

1.3 VARIANCE/FIELD CHANGE NOTICE (V/FCN) DOCUMENTATION

The Variance/Field Change Notice (V/FCN) process is utilized to document the occurrence of two situations. The first is to document a change in protocol occurring when a modification in the characterization approach is required [e.g., a different decision process for defining the extent of contamination or for verifying that soil is below-waste acceptance criteria (WAC) or below-final remediation level (FRL) concentrations]. Factors that will be considered under special circumstances include safety of the workers, cost effectiveness, the need for a timely response, and impending weather conditions. This type of V/FCN requires agency approval prior to implementation.

The second situation requiring a V/FCN is to provide documentation of sampling and analytical activities and to provide variable information that is dependent upon field conditions and cannot be specified initially in this PSP. As part of the excavation control process, the collection of physical samples will be documented in applicable field logs and with V/FCNs. Additionally, the Data Group Form, FS-F-5157 will be generated per Procedure EW-1021, Preparation of the Project Waste Identification and Disposition (PWID) Report, following the generation of data from the analysis of physical samples. In this situation the use of this V/FCN form is not used to document a change in the protocol of this PSP, but is used to document sampling and analytical activities in order to demonstrate that these activities are compliant with the protocols of this PSP.

If a V/FCN is required, the Characterization Manager will document the change and requirements through the V/FCN process in accordance with Section 7.5 of the *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation*, 20300-PSP-0011.

1.4 KEY PERSONNEL

Key project personnel responsible for performance of the project are listed in Table 1-1.

TABLE 1-1
KEY PERSONNEL

Title	Primary	Alternate
Department of Energy (DOE) Contact	Johnny Reising	TBD
Environmental Closure Project Manager	Jyh-Dong Chiou	Frank Miller
Characterization Manager	Frank Miller	Rich Abitz
A2PIIS3 Lead	Debbie Brennan	Krista Flaugh
RTIMP Manager	Mike Frank	Dale Seiller
Soil Sampling Manager	Tom Buhrlage	Jim Hey
Surveying Manager	Jim Schwing	Andy Clinton
WAO Contact	Linda Barlow	Lawrence Love
Construction Manager	Mike Stumbo	Don Goetz
Engineering Lead	Tony Snider	Dave Russell
Laboratory Contact	Heather Medley	Amy Meyer
Data Validation Contact	Jim Chambers	Baohe Chen
Field Data Validation Contact	Dee Dee Edwards	Jim Chambers
Data Management Lead	Debbie Brennan	Krista Flaugh
Radiological Control Contact	Corey Fabricante	TBD
FACTS/SED Database Contact	Kym Lockard	Susan Marsh
Quality Control Contact	Reinhard Friske	Darren Wessel
Safety and Health Contact	Gregg Johnson	Pete Bolig

FACTS - Fernald Analytical Computerized Tracking System
RTIMP - Real Time Instrumentation Measurement Program
SED - Sitewide Environmental Database
WAO - Waste Acceptance Organization

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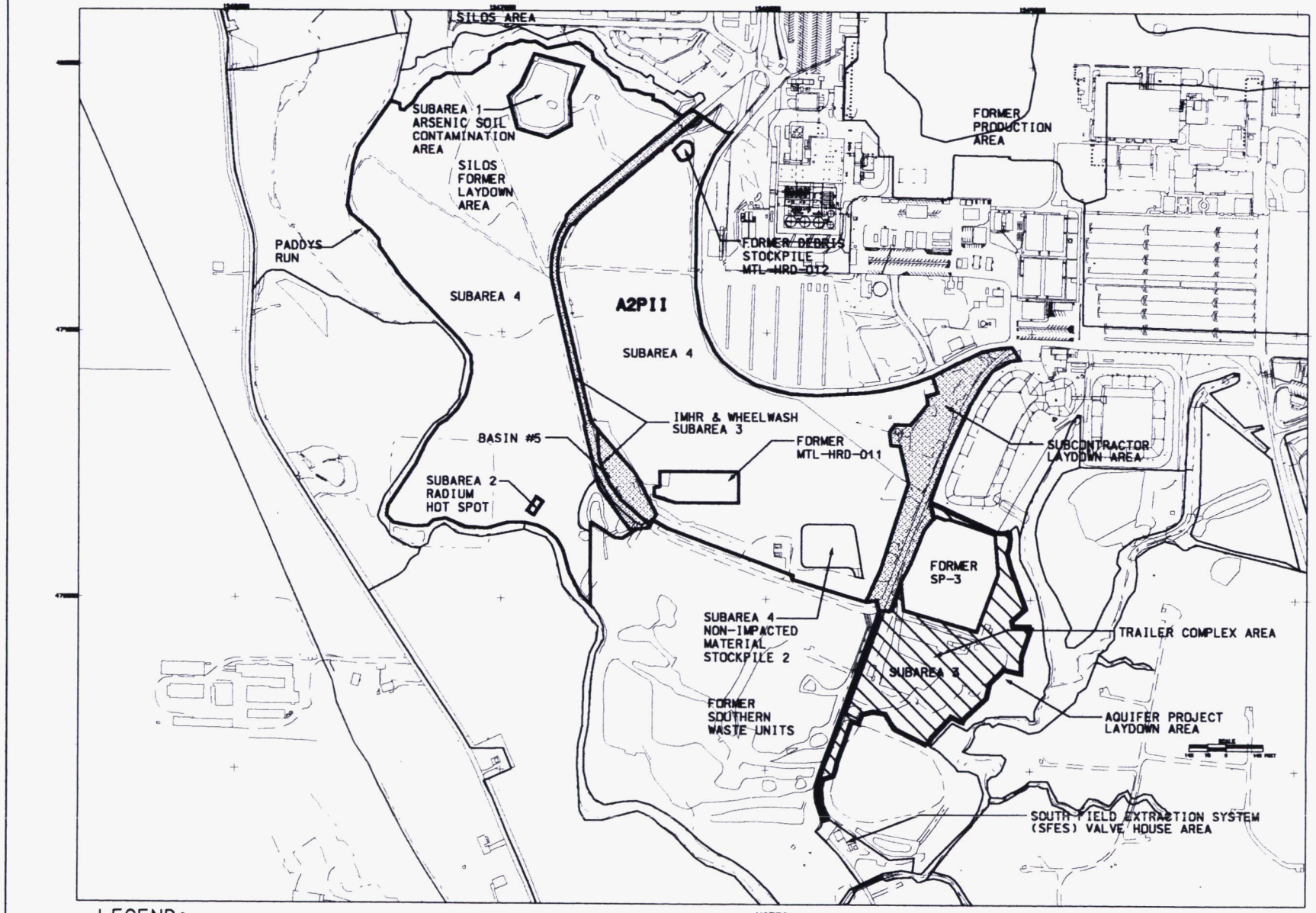

FIGURE 1-1. A2PII - SUBAREA 3, EXCAVATION CONTROL TCA/AQL

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2.0 AREA-SPECIFIC WORK REMAINING STATUS

2.1 TRAILER COMPLEX AREA/AQUIFER PROJECT LAYDOWN AREA

2.1.1 History

The TCA/AQL is a flat, irregularly shaped area bordered on the east by the Storm Sewer Outfall Ditch (SSOD), the north by the Storm Water Retention Basin (SWRB), the south by the former Active Flyash Pile and the west by the Area 2, Phase I and the former Soil Pile 3 certified areas. Some of the area is covered with gravel or pavement. The remainder is undeveloped grassland. Miscellaneous debris can be found throughout the area.

The real-time scan of the TCA/AQL Area was performed under 20450-PSP-0005, *Project Specific Plan for the Predesign of Area 2, Phase II - Subarea 3 (Supplement to 20300-PSP-0011)* identified above-FRL readings for total uranium in the southeastern portion of the AQL Area adjacent to the SSOD (see Figure 2-1).

During predesign of A2PIIS3, an area of elevated radium-226 and arsenic was discovered in the eastern portion of the AQL adjacent to the SSOD (see Figure 2-1).

2.1.2 Predesign

Predesign of the TCA/AQL Area was completed under the 20450-PSP-0005, *Project Specific Plan for the Predesign of Area 2, Phase II - Subarea 3 (Supplement to 20300-PSP-0011).* Therefore, Section 2.1.2 is not applicable to this PSP.

2.1.3 Excavation Control

2.1.3.1 ASCOCs

Several constituents of concern (COCs) were found to exceed the FRL during the characterization process. Table 2-1 and Figure 2-1 identify the areas to be excavated and the COC driving each excavation. In areas where radiological COCs were identified as above-FRL, excavation will be controlled through the use of real time measurement systems.

The evaluation of the list of preliminary area-specific constituents of concern (ASCOCs) from the *Project Specific Plan for the Predesign of Area 2, Phase II - Subarea 3 (Supplement to 20300-PSP-0011)* resulted in the following list of primary and secondary COCs for excavation control of the TCA/AQL Area. The list of primary COCs is unchanged and will be carried through to certification. No secondary COCs drive any portion of the excavation.

Primary COCs

Total Uranium
Radium-226
Radium-228
Thorium-228
Thorium-232

Secondary COCs

None

The above list of COCs will be used to verify that the planned remedial excavation limits are sufficient to capture the above-FRL contamination during excavation. Note that the entire ASCOC list applicable to this area will be reevaluated during the certification design process to determine which of the ASCOCs will be carried into certification. As always, this evaluation as well as the justification for the retention or elimination of any COC will be presented in the Certification Design Letter (CDL)/Certification PSP for agency review and approval.

2.1.3.2 Excavation Types

There is no historical evidence of soil exceeding WAC levels within the A2PIIS3 soils and none was found during the predesign phase of this investigation. Therefore, the types of excavation identified for the TCA/AQL Area will be for above-FRL areas (driven by total uranium and radium-226). Real-time scanning for total uranium and radium-226 will be performed for above-FRL radiological areas per 20300-PSP-0011, Section 5.1. Tables 2-1 and 2-2 list the excavation control COCs, their limits, and above-FRL areas within the TCA/AQL Area. Table 2-3 addresses the excavation monitoring requirements.

2.1.3.3 Locations

The areas identified as being above-FRL (traveling north to south) within the TCA/AQL Areas are summarized in Table 2-1 and illustrated in Figure 2-1.

2.1.4 Precertification

Precertification will be performed per 20300-PSP-0011, Section 3.0 and Section 6.0.

TABLE 2-1
ABOVE-FRL AREAS AND COCs FOR TCA/AQL AREA

Above-FRL Area	Location	Contaminant Driving Excavation	Depth Interval
1	Northeastern portion of TCA	Radium-226	Elevation 571 throughout
2	Southeastern portion of AQL	Total Uranium	0.5' to 1.0' below native soil

TABLE 2-2
LIMITS FOR TCA/AQL AREA EXCAVATION CONTROL COCs

Primary COCs	FRL	MDC	Secondary COCs	FRL	MDC
Total Uranium	82 mg/kg	8.2 mg/kg	None		
Radium-226	1.7 pCi/g	0.17 pCi/g			

MDC - minimum detectable concentration
mg/kg - milligrams per kilogram
pCi/g - picoCuries per gram

TABLE 2-3
EXCAVATION MONITORING/SAMPLING REQUIREMENTS FOR TCA/AQL

Type of Contamination Zone	Types of Samples/Measurements and Data Use		
	Sideslope of Each Excavation Lift	Floor of Each Excavation Lift	Floor/Sideslope at Design Depth for Contamination Zone
Above-FRL Uranium	• NaI for Uranium	• NaI for Uranium	• NaI for Uranium WAC/FRL*
Above-FRL Radium-226	• NaI for Radium-226/ Uranium	• NaI for Uranium	• NaI for Radium-226/ Uranium

* During high-purity germanium (HPGe) detector measurements, the data collected will be evaluated later for precertification purposes by reviewing concentrations of thorium-232 and radium-226, as well as thorium-228 and radium-228 based on equilibrium, in comparison to their respective FRLs.

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SP-3

TRAILER COMPLEX

EXCAVATION
AREAS

SUBAREA 3

N

LEGEND:

SCALE
100 50 0 100 FEET

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FIGURE 2-1. TCA/AQL EXCAVATION AREAS.

STATE PLANAR COORDINATE SYSTEM 1983

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3.0 INSTRUMENTATION AND TECHNIQUES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

3.1 MEASUREMENT INSTRUMENTATION AND TECHNIQUES
3.1.1 Real-Time
3.1.1.1 Sodium Iodide Data Acquisition (RTRAK, RSS, GATOR, EMS)
3.1.1.2 HPGe Data Acquisition
3.1.1.3 Excavation Monitoring System
3.1.1.4 Radon Monitor
3.1.2 Surface Moisture Measurements
3.2 REAL-TIME MEASUREMENT IDENTIFICATION
3.3 REAL-TIME DATA MAPPING
3.4 REAL-TIME SURVEYING

4.0 PREDESIGN

The predesign investigation of the Stream Corridors was completed per *Project Specific Plan for the Predesign of Area 2, Phase II - Subarea 3 (Supplement to 20300-PSP-0011).*

5.0 EXCAVATION CONTROL MEASURES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

5.1 EXCAVATION DESIGN CONTROL REQUIREMENTS
5.1.1 Contamination Zone
5.1.2 Floors, Roads and Foundations
5.1.3 Real-Time Lift Scans
5.1.4 Above-WAC Lift Scans
5.2 ORGANIC SCREENING AND PHYSICAL SAMPLING REQUIREMENTS
5.2.1 Above-WAC Photoionization Detector (PID)/Gas Chromatograph (GC) Screening
5.2.2 All Other Physical Sample Requirements
5.2.3 PID Screening and Physical Sampling Procedures
5.2.4 Physical Sample Identification

6.0 PRECERTIFICATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

6.1 INITIAL PRECERTIFICATION NaI SCAN AT BASE OF DESIGN GRADE
6.2 PRECERTIFICATION HPGE MEASUREMENTS IN 20 PPM FRL (URANIUM) AREAS
6.3 PRECERTIFICATION HPGE MEASUREMENTS IN 82 PPM FRL (URANIUM) AREAS
6.4 DELINEATING HOT SPOTS FOLLOWING PRECERTIFICATION HPGE MEASUREMENTS

7.0 QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

7.1 QUALITY CONTROL SAMPLES - REAL-TIME MEASUREMENTS AND PHYSICAL SAMPLES
7.2 DATA VALIDATION
7.2.1 Physical Sample Data Validation
7.2.2 Real-Time Data Verification/Validation
7.3 APPLICABLE DOCUMENTS, METHODS AND STANDARDS
7.4 SURVEILLANCES
7.5 IMPLEMENTATION AND DOCUMENTATION OF VARIANCE/ FIELD CHANGE NOTICES (V/FCN)

8.0 SAFETY AND HEALTH

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

9.0 EQUIPMENT DECONTAMINATION

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

10.0 DISPOSITION OF WASTES

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for this section.

11.0 DATA AND RECORDS MANAGEMENT

Reference the corresponding section of 20300-PSP-0011, *Project Specific Plan Guidelines for General Characterization for Sitewide Soil Remediation* for each of the following sections:

11.1 REAL-TIME
11.2 PHYSICAL SAMPLES